Amish Sethi

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EDUCATION

Pine-Richland High School — Gibsonia, Pennsylvania — **Graduated – June 2022**
Cumulative GPA: 4.00/4.00

University of Pennsylvania — Philadelphia, Pennsylvania — **Graduating – May 2026**
Junior– Computer Science — Cumulative GPA: 4.00/4.00

TECHNICAL SKILLS

Java, Python, MatLab, JavaScript, HTML, C#, TensorFlow, Keras, PyTorch, PHP, scikit-learn, MySQL, Arduino, Raspberry Pi
https://github.com/AmishSethi https://github.com/ASethi04

WORK EXPERIENCE

Roadbotics | Summer Internship | Pittsburgh, PA — **June 2021 – August 2021**
- Used computer vision in TensorFlow to detect, classify, and locate traffic signs from input video
- Developed a Mask-RCNN deep neural network achieving 90 percent accuracy in detecting traffic signs
- Used by PA state government to keep track of road assets

Cloudcast Computing | Paid Summer Internship | Pittsburgh, PA — **June 2020 – August 2020**
- Developed a web interface in Laravel (PHP framework) for a teacher to view their dashboard with all their lectures
- Created an "attendance" sheet using Google Meets API that shows which students attended the lecture and for how long, increasing overall engagement rate 48 percent for users
- Developed model in OpenCV to blur any children's faces in case they were recorded and going to be uploaded

RESEARCH AND PROJECTS

CLAM: Chaining LLM Adapter Modules | 2025 Neurips Submission (Second Author) — **January 2024 – Current**
- Developed CLAM, a framework unifying parameter-efficient finetuning, quantization, and pruning for LLMs
- Enabled chaining of adapters with low overhead and high modularity, outperforming state-of-the-art methods by up to 6.5%
- CLAM achieves superior trade-offs in compression and downstream performance, beating QLoRA while halving active bits
- Paper accepted as a poster at ICML's ES-FoMo-II Workshop2024; I led Github contributions to the project

Dolphin: A Framework for Neurosymbolic Learning | 2025 ICML submission (Lead Author) — **August 2024 - Current**
- Created DOLPHIN, a novel framework combining symbolic reasoning and neural computation using CPU-GPU hybrid execution
- Achieved up to 62x faster convergence than baselines across 13 benchmarks spanning text, image, and video modalities
- Demonstrated state-of-the-art accuracy on complex reasoning tasks, outperforming Scallop, ISED, and IndeCateR+
- Reviewer scores of 3,4, and 5 at ICML 2025; Average score of 4 which is 'accept'

Embedding Models with Activations | 2025 Neurips submission (Second author) — **January 2025 - Current**
- Devised a novel method to embed LoRA adapters and task prompts into a shared space using forward-pass delta activations
- Enabled similarity-based retrieval and alignment verification between tasks and adapters
- Provides a low-cost, interpretable embedding for understanding LoRA training effects

LASER: Video Understanding Foundation Model | 2025 Neurips submission (Lead author) — **January 2025 - Current**
- Proposed LASER, a neurosymbolic model for spatial-temporal reasoning from video-caption data
- Leverages high-level logic derived from LLM prompts and contrastive/temporal/semantic losses
- Demonstrates improved video understanding performance on common benchmarks such as OpenPSVG
- Injecting scene graphs with LASER significantly improves performance when integrated into embodied agent simulations

FIIGNET: Synthetic Data for Aquaponics | National University of Singapore (First author) — **May 2023 – August 2023**
- Created a generative AI pipeline in PyTorch (FIIGNET) to synthesize images of fish with specified diseases
- Trained early detection models on synthetic + real datasets, with FIIGNET improving accuracy by 17%
- Presented paper and poster at the SERIUS program at the National University of Singapore

Genetics Research | University of Pittsburgh (First author) — **November 2019 – January 2021**
- Utilized machine learning, clustering, and dimensionality reduction algorithms in scikit-learn to identify which genes are expressed differently between those with Alzheimer's and a control group
- Used model to predict likelihood of Alzheimer's based on one's genes with 98% accuracy
- Selected as an ISEF (International Science and Engineering Fair) finalist for this project
- Published preprint of this research has over 1,000 views and 6 citations